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|-------------------------------|--------------------------|----------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/930,007 | OTTER, JAMES WILLIAM | |
| | Examiner | Art Unit | |
| | Gladys J Piazza Corcoran | 1733 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed October 14, 2004.
2. ☒ The allowed claim(s) is/are 1,3-9,21,22,24 and 26-33.
3. ☒ The drawings filed on 14 August 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>12/2/04</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |


 Gladys J. Piazza Corcoran
 Primary Examiner
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Karin H Butchko on December 2, 2004.

The application has been amended as follows:

In the claims:

Claim 1, line 9, after "flowing" delete "one of".

Claim 1, line 9, after "combustion products" delete "and a fluid".

Claim 1, line 10, after "flowing" delete "the other of the combustion products and the fluid" and insert --air--.

Claim 1, line 11, delete "fluid" and insert --air--.

Claim 6, line 2, before "norbornene", delete "the".

Claim 24, line 10, after "flowing" delete "one of".

Claim 24, line 10, after "combustion products" delete "and a fluid".

Claim 24, line 11, after "flowing" delete "the other of the combustion products and the fluid" and insert --air--.

Claim 24, line 12, delete "fluid" and insert --air--.

Claim 27, line 2, before "norbornene", delete "the".

Claim 28, line 1, after "wherein" delete "the fluid is air and".

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Claim 32, line 1, after "claim" delete "1" and insert --3--.

Claim 32, line 4, after "made of" delete "the".

Claim 33, line 1, delete "fluid flows in the" and insert --combustion products flow in the flue gas--.

Claim 33, lines 1 to 2, delete "and the combustion products flow in the cell".

Cancel claim 34.

2. The following is an examiner's statement of reasons for allowance:

Upon reconsideration in light of Applicant's amendments to the claims and arguments, the claims are deemed allowed. As to claim 1, no prior art was found to show or suggest a method for making a heat transfer component by hot extruding norbornene polymer to form an extruded tube, expanding the extruded tube and using the expanded tube as part of a cell of a heat transfer component where combustion products from a burner are flowed through the cell, air flows around the cell and heat is exchanged between the combustion products and the air. As to claim 24, no prior art was found to show or suggest a method for making a heat transfer component by forming a cell of norbornene polymer including first and second expanded tubes in the configuration as claimed and using the cell as part of the heat transfer component where combustion products from a burner are flowed through the cell, air flows around the cell and heat is exchanged between the combustion products and the air.

Bentley et al. (US Patent No. 4,807,588 and US Patent No. 4,848,314) discloses a method of forming a heat transfer component used by flowing combustion products

where the cells of the component are formed by stamping and folding a sheet metal blank laminated to a polymer sheet.

Daddis, Jr. (US Patent No. 6,006,741) discloses a method of forming a heat transfer component used by flowing combustion products where the cells of the component are formed by cold roll forming a metal sheet adhered to a polymer layer.

Rhodes et al. (US Patent No. 5,979,548) discloses a method of forming a solar heat exchanger from a polyolefin material. There is no suggestion to form a cell by extruding and/or expanding norbornene polymer as claimed to form a cell of a heat transfer component for use with combustion products and air as claimed.

Johnson (US Patent No. 3,426,841) discloses a method of forming a generic heat exchanger from polyolefin material. There is no suggestion to form a cell by extruding and expanding norbornene polymer as claimed to form a cell of a heat transfer component for use with combustion products and air as claimed.

Ripka et al. (US Patent No. 5,038,750) discloses a method of forming a space heating appliance from metal.

Scholl (US Patent No. 3,648,768) discloses a method of forming heat exchanger components from plastic material. There is no suggestion to form a cell by extruding and/or expanding norbornene polymer as claimed to form a cell of a heat transfer component for use with combustion products and air as claimed.

Fletcher et al. (US Patent No. 5,078,946) discloses a method of forming a comfort heat exchanger by injection molding polymeric material.

Nakagawa (US Patent No. 4,362,688) discloses a method of molding plastic pipes in general.

Winter et al. (US Patent No. 5,696,045) discloses a polyolefin material which includes norbornene. There is no suggestion to form a cell by extruding and/or expanding as claimed to form a cell of a heat transfer component for use with combustion products and air as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gladys JP Corcoran
Primary Examiner
Art Unit 1733

GJPC